

New species and combinations in Chrysanthellum
(Asteraceae-Coreopsidae)

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Several workers have requested that I make formal the novelties and combinations pending in my revisional study of the genus Chrysanthellum. In my treatment I have recognized 10 species, one of which, C. indicum, is a widespread, subtropical, montane weed which I intend to treat as comprised of four infraspecific taxa as follows.

Chrysanthellum indicum subsp. afroamericanum, B. L. Turner, subsp. nov.

A subspecies indicum et subspecies mexicanum involucris fructificantibus amplioribus (4-6 mm longis), marginibus cartilagineis achaeniorum validioribus (0.2-0.4 mm latis), floribus radiatis pluribus (13-34 rarius 8) differt.

HOLOTYPE (A!): ARGENTINA. Prov. Cordoba, Dept. Colon; Rio Ceballos, 15 Mar 1944, C. A. O'Donnel & J. M. Rodrigues V. 501. (Isotypes: F!, UC!)

The subspecies consists of a single bicontinental (South America-Africa) variety: Chrysanthellum indicum var. afroamericanum B. L. Turner, var. nov., based upon the above type and diagnosis.

Mostly montane or moderately elevated regions of South America and Africa where it occurs as a weed along paths, in gardens and disturbed areas generally; possibly introduced into Africa from South America in relatively recent times.

An exceedingly variable, weedy variety, especially on the eastern side of the Andes in northern Argentina, Bolivia, and Peru where it is undoubtedly native.

Chrysanthellum indicum subsp. mexicanum (Greenm.) B. L. Turner, comb. nov.

Based upon Chrysanthellum mexicanum, as cited below. The subspecies is represented by a single taxon, var. mexicanum.

Chrysanthellum indicum var. mexicanum (Greenm.) B. L. Turner, comb. nov. Chrysanthellum mexicanum Greenm., Proc. Amer. Acad. 39: 114. 1903.

HOLOTYPE (GH): MEXICO. Jalisco: Banks of ravines near Guadalajara, 10 Sep 1890. C. G. Pringle 3259. (Isotypes examined: F, GH, IP, KEW, MICH, NY, S, UC).

Mostly occurring in montane or moderately elevated subtropical regions of Mexico and Guatemala where it occurs as a weed along paths and roadways, especially in shallow wet depressions.

Similar to, but differing from, the var. *indicum* in possessing longer peduncles and longer leaves but especially by the somewhat larger disk achenes with narrower, more ciliate, cartilaginous margins. As noted by Greenman in his original description, var. *mexicanum* bears a close resemblance to var. *indicum*. After examining a broad suite of specimens from throughout the world, I find it most reasonable to treat the largely continental isolates of *Chrysanthellum indicum* as weak, but distinct, varieties, several of which are sufficiently differentiated so as to warrant the rank of subspecies.

Chrysanthellum tamaulipense Turner, sp. nov.

HOLOTYPE (TEX): MEXICO. Tamaulipas: 6 mi N of Aldama on the road to Soto la Marina. "Weedy growth in bottom of small arroyo through the basalt uplands." 25 Sep 1960, J. Crutchfield & M. C. Johnston 5726.

A *Chrysanthellum involutum* foliis mediocaulis minoribus petiolis brevioribus, partibus floris omnibus minoribus, apprimis floribus disci perfertilibus differt. Known only from the holotype and one additional collection (Tamaulipas: 2.4 mi N of Aldama, 16 Sep 1964. Strother 544, TEX).

The species is undoubtedly closely related to *Chrysanthellum involutum* but is readily distinguished by its smaller, less petiolate, mid-stem leaves, generally smaller floral parts and especially by its quite fertile disk florets. In all these characters *C. tamaulipense* approaches *C. indicum* but its circinate, marginal achenes and 4nerved ligules place it nearer *C. involutum*.

Chrysanthellum michoacanum Turner, sp. nov.

HOLOTYPE (TEX): MEXICO. Michoacan: 11-13 km west-southwest of Apatzingán, along the road to Dos Aguas and Aguililla, ca. 300 m, 5-9 Sep 1972, J. V. A. Dieterle 4246. (Isotype: MICH!).

A *Chrysanthellum integrifolium* foliis vulgo ovatis, capitulis amplioribus, radiis longioribus, paleis receptaculi brevioribus, praecipue floribus disci centralibus rubiginosis aliquot (3--8) fortiter atrorubiginosis demum floribus peripheralibus duplo amplioribus differt.

Only two other collection sites are known, both near Apatzingán (*Hinton et al.* 12058, GH, NY, US; *McVaugh* 17907, MICH).

This taxon is undoubtedly most closely related to *Chrysanthellum integrifolium* but can be readily distinguished by its leaves, larger heads with longer ray florets, shorter chaff and most notably by the brownish-red disk florets, some of these (3--8) becoming much darker and nearly twice the size of the outer disk florets, which are presumably at the same (or yet later) stage of development. This latter phenomenon was not observed in the dry heads of *C. integrifolium*.

Chrysanthellum perennans Turner, sp. nov.

HOLOTYPE (LL): MEXICO. Oaxaca: Along the Pan-American Highway, 22 km NW of Zanatepec, 100 m elevation or less; high dense vegetation. 10 Jul 1958, R. M. King 463. Isotype (MICH!).

Herbae perennes erectae glabrae. Folia tripartita. Capitula solitaria longe pedunculata pedunculis 15--20 cm longis; flores radiati ca. 13, ligulis 8 mm longis, 2 mm latis aurantiacis 6--7-nervatis apice profunde lobatis, disci flores verosimiliter steriles.

Known only from the type locality where it reportedly is uncommon in sandy soil.

This is the only perennial taxon in the genus and is readily recognized by the elongate peduncles which arise single from each rosette. Unfortunately, the collections available do not have mature heads so that the shape of the achene is unknown. These will probably prove to be circinate to some degree, to judge from the position of the corolla upon the somewhat oblique ovary, for it is positioned off center towards the abaxial side.